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SHUMAKE, STEPHEN A., RAY T. STERNER, and STANLEY E. GADDIS. Development of repellent products to reduce cable-gnawing damage by northern pocket gophers. USDA/APHIS/ADC Research, National Wildlife Research Center, 1716 Heath Parkway, Fort Collins, CO 80524-2719 USA

Potential adverse environmental effects posed by rodenticide baits or toxic burrow fumigants could be minimized or eliminated through the use of more effective repellents to reduce both the gnawing damage to communications/power cables and the re-invasion of rodents into previously controlled agricultural areas. A series of laboratory studies were conducted to quantify gnawing behaviors of northern pocket gophers (*Thomomys talpoides*) and to develop improved cable repellent coatings. These included observational evaluations of the degree of incisor, mouth and nose contacts made as the animals gnawed cable samples and other materials. Video recordings and chemical marker agents were used to examine and quantify the degree of mucosal/incisor contact by individual animals. Descriptive results of this research, as well as, the repellent efficacy afforded by denatonium benzoate and capsaicin formulations are presented. Relevant cable parameters (e.g. diameter, texture, hardness) and anatomical characteristics of the species (e.g. trigeminal nerves, diastema) that may affect repellent delivery are discussed.